

NOTE

*Liriomyza trifolii* (Burgess) (Diptera: Agromyzidae) Overwinters  
Outdoors in Maryland

The leafminer *Liriomyza trifolii* (Burgess) is a serious pest of numerous horticultural crops grown in fields and greenhouses. Although prevalent in southern United States, the insect's distribution also includes the District of Columbia, Delaware, Pennsylvania, New Jersey, Iowa, and Ontario (Spencer, 1973. *The Agromyzidae (Diptera) of Economic Importance*. Dr. W. Junk, The Hague). Whether this occurrence in northern states and a Canadian province is the result of greenhouse collections, summer outdoor collection of insects that have escaped from greenhouses, or collections of truly overwintering field populations is unclear.

In order to determine if the insect, which usually pupates just beneath the soil surface, could overwinter in Maryland, we placed four wood frame cages (50 × 40 × 35 cm) covered with fine mesh screening (leafminer adult-proof) in a heavily infested field of dahlias located in Kingsville, Maryland (14 km NE of Baltimore) on 23/X/84. Cages had open bottoms and were sunk 5–10 cm into the soil next to an infested plant. Each cage had a tightly fitted removable screen lid. Several dahlia leaves with larva-filled mines were placed in each cage at set-up, as were two yellow sticky boards (Olson Products, Media, OH). The boards were replaced 17 times through the fall, winter, and spring. A maximum/minimum thermometer was placed in one cage, and at each visit, the maximum and minimum temperatures were recorded.

The dahlias were killed by frost on 8/XI/84. From frost until 9/I/85, 217 adults were captured on the yellow boards. From 9/I/85 until 11/IV/85 no miners were caught. Between 11/IV/85 and 25/IV/85, 11 *L. trifolii* adults (2 males, 9 females) were caught (at least 2 adults/cage). No adults were found on boards on subsequent visits. All of the spring-collected adults were deposited in the insect collection of the National Museum of Natural History. The lowest recorded air temperature in the monitored cage was –26°C (between 9/I/85 and 1/II/85). High temperatures (37°C maximum) may have triggered adult emergence in April.

We conclude that *L. trifolii* is able to overwinter in Maryland. The results indicate that greenhouse infestations in the spring may be attributable in part to adults moving inside from either infested outdoor fields or from infested leaf litter removed to outdoors from the greenhouse. The results also suggest that a few of the insects diapause, we suspect as pupae. The number of adults captured after frost totaled 228 of which 11 overwintered. This suggests that a relatively low percentage (4.8%) of the leafminers that tolerated cold conditions actually overwintered.

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